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ABSTRACT

The assumptions individuals make about their personal behaviors have received extensive attention, particularly the concepts of locus of control and self-efficacy. An additional concept, change orientation, refers to assumptions about how to change personal behavior. Approximately 180 subjects ranging from college freshmen to graduate students took the Approaches to Behavior Change (ABC) Inventory. Results supported the notion that change orientation is a concept that may discriminate between various groups of individuals. Some definite patterns emerged among the levels of academic attainment represented by the student subjects. In addition, high and low self-managers showed modest differences in their patterns and substantial differences in their completion of tasks. The ABC Inventory instrument is included in the document along with tables and figures that illustrate the research results. (JAC)

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Identifying Approaches Toward
Behavior Change

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Identifying Approaches Toward Behavior Change

The assumptions which individuals make about their personal behaviors have received extensive attention in the psychological literature. Two concepts that have been extensively investigated are locus of control and self-efficacy. Locus of control relates to assumptions about the effects of one's behaviors on environmental events and self-efficacy to assumptions about one's ability to perform particular behaviors. We are attempting to add a concept to this general area of investigation. Our concept, "change orientation," relates to assumptions about how to change personal behaviors.

To this point, we have identified several different approaches to personal change, some of which seem highly consistent with self-management theory and others which seem antithetical to self-management. Our approaches to personal change were initially developed on a conceptual basis by examining the personal change assumptions inherent in different life style approaches. To verify the adequacy of our classification scheme, we asked a group of graduate students (N=30) to describe in their own words how they had dealt with recent behaviors they wanted to change. We found that their open-ended descriptions could readily be classified under our categories. We are not contending that our classification scheme is exhaustive or that change categories could not be described in other ways. However, our approach does provide a convenient way of determining whether individuals generally report change orientations which are compatible with self-management theory. Our approaches are described in Table 1.

Insert Table 1 about here

The three approaches that we assumed to be most consistent with self-management are H. Thinking Strategies, I. Social Environment, and J. Physical Environment (Williams and Long, 1983). Each of these approaches assumes that behavior is causally related to events within the internal or external environment. Thus, manipulating these events should lead to changes in personal behavior. The chemical, spiritual, and willpower approaches, while not fundamental to the self-management orientation, may in some cases complement the self-management approach. For example, both willpower and spiritual approaches may help you maintain your commitment to self-change. Only the first four categories, which convey a passive attitude toward personal change, seem incompatible with effective self-management.

In taking our inventory, individuals are asked to identify up to 15 behaviors from the Self-Description Form which they have wanted to change. After designating these behavior on the Approaches to Behavior Change (ABC) Inventory (see Figure 1), the individual then indicates which approach(es) s/he used in dealing with each behavior. If the individual selects more than one change approach for a particular behavior, s/he circles the major approach used. The individual also rates the "Initial Effectiveness" of the change strategies on a 0-4 scale and the "Maintenance" of the change on a 0-4 scale for each behavior selected.

All of us periodically want to increase some of our behaviors (perhaps exercising) and decrease others (complaining). You were presented with a list of behaviors in the Self-Description Form B. You may have wanted to change some of these behaviors at some point in your life. We would like for you to identify on the accompanying form up to 15 of the behaviors that you wanted to change (either increase or decrease) and the ways you tried to change them.

Please read the "Approaches to Behavior Change" described below (A-J). For each of the behaviors you wanted to change, indicate which approach you used by checking the appropriate column. You may choose more than one approach, but circle the major approach used. After identifying the change approach(es), rate them both in terms of the initial effectiveness (such as reaching a goal of 20 lb. weight loss) and the maintenance of the change (keeping the weight off permanently). On the accompanying form, place either a 0, 1, 2, 3, or 4 in the column for "Initial Effectiveness" and a 0, 1, 2, 3, or 4 in the column for "Maintenance" of the change. 0 represents the low end of these scales and 4 the high end.

- A. Non-action (beyond control) - Even though you wanted to change the behavior, you took no action to change it because you saw it as unchangeable due to fate, heredity, biological limitations, or other factors.

Examples: Inability to lose weight due to a metabolic problem
"Everyone in my family is quiet and shy."
"That is just the way I am."

- B. Non-action (choice) - Even though you wanted to change the behavior, you took no action to change it, either because the change was not a top priority or because the behavior was too pleasurable to give up.

Examples: Desiring to quit smoking, but continuing to smoke because you enjoy it
"I'd like to make better grades, but I can't seem to buckle down."

- C. Spontaneous - You assumed that the behavior would change on its own without specific efforts to change it.

Examples: "I'll probably start getting enough rest eventually."
"One of these days I'm bound to settle down in my work habits."

- D. Others - You expected or allowed others to take the initiative in changing the behavior.

Examples: Expecting others to seek you out for conversation or remind you of tasks to be done
"I just don't hear the alarm. My mother always has to call me three times in the morning."

- E. Chemical - You utilized medication or other chemical substances in attempting to change the behavior.

Examples: Taking medication to curb appetite or give energy
Drinking alcoholic beverages to relax
"After a few drinks, I can talk to people more easily at parties."

- F. Spiritual - You turned to a higher power (God or supreme being) for guidance and support in changing the behavior.

Examples: Praying for assistance in eliminating a bad habit or becoming more socially popular
Reading the Bible or other sacred works for inspiration and guidance

- G. Will-power - You depended entirely on your inner strength and resources to change the behavior.

Examples: "I have made up my mind to lose weight."
"The only way to quit smoking is to have enough will-power to tough it out."

- H. Thinking Strategies - You used specific thinking strategies to change the behavior.

Examples: Using meditation and relaxation techniques to reduce anxiety
Making positive self-statements to reduce feelings of depression
Using self-instructions to help you perform a task

- I. Social Environment - You sought support and feedback from friends or groups to help you change the behavior.

Examples: Discussing a problem with a good friend
Seeking out a group such as Alcoholics Anonymous, Weightwatchers

- J. Physical Environment - You altered or rearranged the physical environment to change the behavior.

Examples: Increasing probability of daily exercise by writing out schedule
Decreasing tendency to smoke by recording when, how often, and in what circumstances the smoking occurs
Omitting purchase of junk food items

Insert Figure 1 about here

Method

Subjects

Approximately 180 subjects from four different groups took the ABC Inventory: (1) university freshmen (N=57); (2) second and third year nursing students (N=69); (3) university upperclassmen (N=24); (4) university graduate students (N=33). Only the graduate students have been involved in the reliability assessment to this point. These students were administered the ABC Inventory on two separate occasions--approximately 2-3 weeks apart near the mid-point of the academic quarter.

Reliability

Reliability was assessed by first computing the percentage of choices made by each student in each of the ten change categories at the pre and post level and then determining the extent to which these percentages matched from the pre to the post assessment. Percentages, instead of frequency counts, were used in this comparison because the number of target behaviors selected by the subject might greatly affect the frequency counts but not necessarily the percentage of responses in the various categories. A pre-post comparison of percentages was considered a match if the two percentages for a particular change category fell within five percentage points of each other. Thus, if the pre-post agreement

agreement for the group as a whole was the average of the individual percentages of agreement. The group percentage of agreement proved to be 57 for the strategies checked and 74 for the strategies circled. This difference in the reliability of the checked and circled approaches suggests that the primary change approaches reported by an individual are quite consistent while the supporting approaches may vary considerably.

The test-retest reliability findings for other facets of ABC Inventory are summarized in Table 2. The correlation coefficient for the number of behaviors chosen for change was .67 and the average number of approaches chosen per behavior was .72, both exceeding the .50 standard for reliability recommended by Helmstadter (1973). The correlation for the average initial effectiveness was lower at .42 while the correlation for the average maintenance was .79, suggesting that information regarding change over time is more reliable than retrospective information regarding the immediate impact of change approaches.

Insert Table 2 about here

Findings

The mean number of behaviors chosen by the total sample of 183 was 7.82. The standard deviation was 4.35. The median was seven and the mode was five, indicating a positively skewed distribution. While there was little variation in the mean number of behaviors chosen by the freshmen, nursing students, and university upper classmen, the graduate students chose more behaviors than did the other groups. The reasons for this difference are unclear. Perhaps graduate students are more

Table 2
Test-Retest Reliability Coefficients for ABC Scale

Scale	Test-retest Coefficient	Probability
Number of Behaviors chosen to change (n=27)	.67	.0001
Average initial effective- ness (n=27)	.43	.0268
Average maintenance (n=26)	.79	.0001
Average number of strategies checked per behavior (n=26)	.72	.0001

aware of behaviors they want to change because they are more aware of themselves, more objective in their self-evaluations, or more oriented towards change. The differences between males in the number of behavior selected were negligible. These means are illustrated in Figure 2.

Insert Figure 2 about here

The average percent of time any approach to change was checked or circled on the inventory for the total sample is found in Table 3. The percentages of checked responses in the willpower category is strikingly high. Thinking yielded the second highest percentage of checked responses with non-action (choice) very close. An examination of the circled approaches (the primary strategies) indicates that willpower is again far ahead of all other approaches. However, the three approaches identified as most consistent with self-management theory were grouped in the next highest range along with spiritual.

Insert Table 3 about here

The exceptionally high percentages of checked and circled responses in the willpower category were indeed surprising and have caused us to question the clarity of this concept. It may be that our description of willpower is too global. Or, the participants may generally associate willpower with self-change, irrespective of how the concept is defined in an inventory. The common conception of willpower may include some

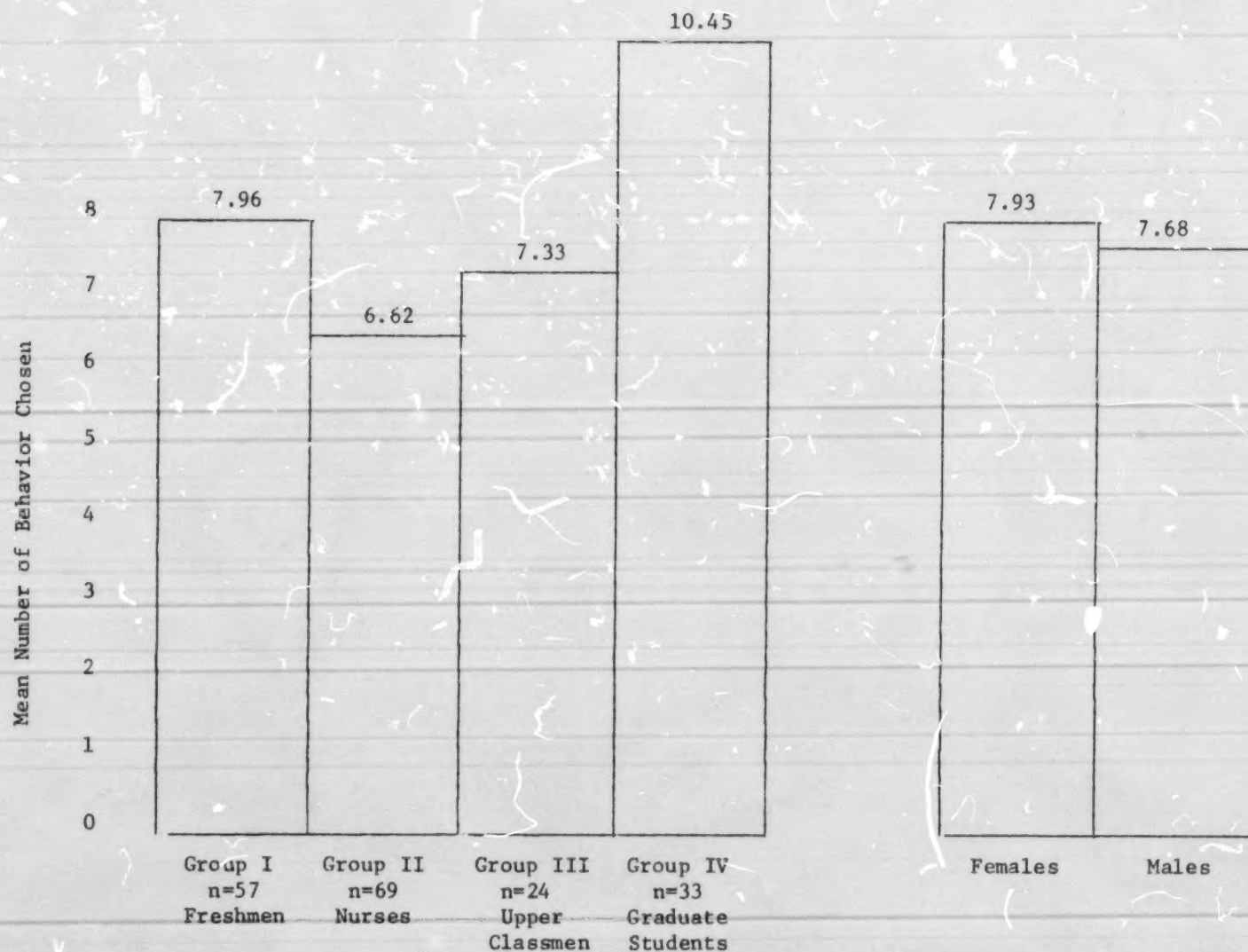


Figure 2. Mean Number of Behaviors Chosen by Subject Group

Table 3

Average Percent of Time Approaches Checked or Circled for Combined Data
(N=183)

Approaches to Change	Checked	Circled
Non-action (no control)	4	2
Non-Action (choice)	14	2
Spontaneous	8	5
Other	3	2
Chemical	1	0
Spiritual	5	12
Willpower	30	39
Thinking	16	16
Social	9	10
Physical	8	13

operations which are very compatible with self-management, e.g., a perception of inner control and the ability to persevere and maintain one's focus. While a person may make the decision to change (willpower) there may be subtle, perhaps unconscious processes that facilitate the process of change beyond the decision itself. Maxie Maultsby (1978) refers to reflex thinking, which he characterizes as "self talk," that can exist outside one's awareness until attention is directed to it. What may be outside an individual's awareness when using willpower would be an interesting topic for further research.

An analysis of the results by subject groups generally reveals patterns consistent with that of the total group (see Table 4). However, the university freshmen and, particularly, the second and third quarter nursing students (comparable in age to sophomore and junior university students) checked the non-action choice category somewhat more frequently than the other groups. Also, the university freshmen were much less inclined to choose thinking, social, and physical (our self-management triad) as their primary strategies than the other groups. One exception to this pattern is the nursing students' de-emphasis on the social strategy. Perhaps the rigorous demands of their professional education preclude the possibility of seeking much social support for their behavior changes. Note the even distribution of our self-management approaches among the university upperclassmen: thinking (15%), social (14%), and physical (16%). The thinking approach was emphasized very heavily by our graduate sample. Bear in mind that thinking is a primary means these individuals have used in achieving professional growth.

Insert Table 4 about here

A comparison of the change approaches of the high and low self-managers shows that willpower is the primary approach reported by both groups, 51 percent average for high self-managers and 41 percent average for low self-managers. The next three highest scoring approaches for low self-managers are physical (17%), spiritual (16%), and thinking (10%); the next three highest for the high self-managers are thinking (15%), social (10%), and physical (10%). Thus, the major differences between the two groups are: low self-managers are more inclined to use spiritual and less inclined to use social than the high group.

Another very interesting difference between the high and low self-managers is that 31 out of 39 high self-managers completed the ABC inventory, whereas only 9 of the 40 low self-managers completed the task to the extent of circling the most significant approach when more than one approach was checked. These same differences are evident to a slightly lesser degree in the checked data. (Table 5 summarizes these results.) Perhaps low self-managers are more divergent in their thinking and have more difficulty finishing tasks or keeping instructions clearly in mind, whereas high self-managers may be more divergent in their thinking. On the other hand, low self-managers may allow themselves greater flexibility in withdrawing from tasks. Further research is needed to clarify these possibilities.

Table 4

Average Percent of Time Approaches Checked or Circled for Grouped Data

Approaches to Change	(Freshmen (n=57))		Nurses (n=57)		Upper Classmen (n=24)		Graduate Students (n=33)	
	Checked	Circled	Checked	Circled	Checked	Circled	Checked	Circled
Non-action (no control)	6	3	4	6	1	0	2	1
Non-action (choice)	13	2	18	0	8	1	9	3
Spontaneous	11	10	8	0	6	4	7	6
Other	5	4	1	0	7	2	3	1
Chemical	1	0	1	0	2	0	1	0
Spiritual	5	27	6	10	7	10	4	6
Willpower	32	40	31	37	33	38	26	39
Thinking	16	3	15	16	11	15	22	23
Social	7	2	9	6	14	14	11	1
Physical	4	7	8	26	11	16	16	11

Insert Table 5 about here

The high and low self-managers did not differ significantly in the number of behaviors selected, in their initial effectiveness ratings, or in their maintenance ratings. However, the high self-managers did report using a greater number of strategies than the low self-managers (see Table 6). This latter pattern is consistent with previous research which has distinguished effective and ineffective self-managers (Perri and Richards, 1977).

Insert Table 6 about here

Conclusion

These results lend support to the idea that change orientation is a concept that may discriminate between various groups of individuals. Some definite patterns emerged among the levels of academic attainment represented in the study. Also, high and low self-managers showed modest differences in their patterns and substantial differences in their completion of the task. A major logistical problem needing attention in followup research is the complexity of the instrument. The present format requires respondents to understand and keep in mind a lot of information (the ten change categories) and then to make choices among categories of that information, something the subjects may not have consciously done in the past. The retrospective nature of the instrument makes these judgments even more difficult.

Table 5
Percentages for High
and Low Self-Managers

	High		Low	
	Checked (n=36)	Circled (n=31)	Checked (n=16)	Circled (n=9)
Non-action (no control)	3	0	6	6
Non-action (choice)	10	4	17	2
Spontaneous	5	2	9	2
Other	5	1	4	3
Chemical	1	0	1	0
Spiritual	5	7	5	16
Willpower	31	51	29	41
Thinking	9	15	15	10
Social	12	10	9	4
Physical	10	10	7	17

Table 6

Differences between High and Low Self-Managers on
Additional Facets of ABC Inventory

	High Mean	Low Mean	Probability
1. Number of behaviors	7.5	8.4	
2. Average Number of Strategies checked per behavior	1.9	1.4	.005
3. Initial effectiveness	2.5	2.3	
4. Maintenance of change	2.3	1.8	.06

Based on this initial research we may choose to limit the number of change approaches, clarify our description of willpower, and have subjects focus only on current behavior changes.

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